

ABSTRACT OF THE DISCLOSURE

An ESD protection component with a deep-N-well structure in CMOS technology and the relevant circuit designs are proposed in this invention. The ESD protection component comprises a lateral silicon controlled rectifier (SCR) and a deep N-well. The SCR comprises a P-type layer, an N-type layer, a first N-well and a first P-well. The P-type layer is used as an anode of the SCR; the N-type layer is used as a cathode of the SCR; the first N-well is located between the P-type layer and the N-type layer and is contacted with the P-type layer; and the first P-well is contacted to the first N-well and the N-type layer. The deep N-well is located between the first P-well and the P-substrate, and is used to isolate the electric connection between the P-substrate and the first P-well. A plurality of these ESD protection components arbitrarily connected in series increases the total holding voltage of ESD protection circuit, thus preventing occurrences of latch-up.